MERN Stack E-Commerce Backend Development Prompt (100 Features in 20 Steps)

I am building a MERN stack eCommerce backend. I have the following 100 features I want to implement (listed below). Break them into 20 logical development steps with exactly 5 features per step. Each step must include: 1. Feature names (from my list) 2. Why these features are important 3. Recommended libraries/tools (Node.js, Express, MongoDB, and other NPM packages) 4. Implementation tips (short, actionable steps) Rules: - Always stop after giving me just Step 1. - Wait for me to say "continue" before giving Step 2. - Keep the order realistic for backend development (security/authentication first, analytics last). - Each step must be practical to implement in sequence.

Authentication & User Management

1. User registration with email/password
2. Secure password hashing (bcrypt)
3. Email verification on signup
4. Login with JWT authentication
5. Login session expiration & refresh token support
6. Password reset via email
7. Two-factor authentication (2FA) via email/SMS
8. Role-based access control (User/Admin/Manager)
9. Account locking after failed login attempts
10. Login device & location tracking

Product Management

1. Add new products (Admin)
2. Edit product details
3. Delete products
4. Product categories & subcategories
5. Product variants (size, color, etc.)
6. Product stock management
7. Product SKU system
8. Product search & filtering API
9. Product image upload (Multer/Cloudinary)
10. Bulk product import via CSV

Cart & Wishlist

1. Add to cart API
2. Remove from cart API
3. Update cart item quantity
4. Clear cart
5. Persistent cart per user (even after logout)
6. Guest cart with temporary session
7. Wishlist add/remove API
8. Move wishlist items to cart

9. Multiple saved carts for users
10. Cart price auto-update if product price changes

Order Management

1. Create order API
2. Order status tracking (Pending, Shipped, Delivered)
3. Cancel order API
4. Order refund request API
5. Invoice generation (PDF)
6. Order history retrieval
7. Multiple shipping address support per user
8. Order confirmation email/SMS
9. Estimated delivery date calculation
10. Admin order overview dashboard API

Payments & Checkout

1. Stripe payment integration
2. PayPal payment integration
3. Cash on Delivery option
4. Payment verification & webhooks
5. Currency conversion API
6. Apply discount codes at checkout
7. Gift card redemption API
8. Partial payment support
9. Save payment methods securely (tokenization)
10. Retry failed payments API

Shipping & Logistics

1. Shipping cost calculation API
2. Integration with courier APIs (FedEx, DHL, etc.)
3. Free shipping rules
4. In-store pickup option
5. Delivery slot booking
6. Real-time shipment tracking API
7. Multi-warehouse support
8. Local delivery within certain radius
9. Packaging cost calculation
10. Delivery confirmation API

Reviews & Ratings

1. Post product review API
2. Edit/Delete review API
3. Star rating system
4. Review moderation by admin
5. Verified purchase tag for reviews
6. Like/dislike reviews API

7. Report abusive review API
8. Fetch reviews with pagination
9. Average rating calculation API
10. Review sentiment analysis API

Admin & Analytics

1. Admin dashboard stats API (sales, users, etc.)
2. Revenue & profit calculation API
3. Sales trend analysis API
4. Most sold products API
5. Customer lifetime value calculation API
6. Active users tracking API
7. API usage logging
8. Error & exception tracking API
9. User feedback collection API
10. System health monitoring API

Security & Performance

1. Rate limiting on sensitive APIs
2. IP blocking after suspicious activity
3. HTTPS enforcement
4. SQL/NoSQL injection prevention
5. XSS & CSRF protection
6. API request validation (Joi/Yup)
7. File upload validation (size, type)
8. Distributed caching (Redis)
9. GZIP compression
10. API response time monitoring

Advanced & Marketing

1. Abandoned cart email trigger API
2. Personalized product recommendations API
3. Recently viewed products API
4. Coupon usage tracking API
5. Loyalty points system API
6. Automated low-stock alerts API
7. Multi-language backend API support
8. Multi-currency backend API support
9. Affiliate tracking API
10. SEO-friendly product URL generation API